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ABSTRACT

This report is concerned with young men in their late teens. In particular, it deals with patterns of change, and stability, which can be linked to family, high school, and post-high school environment. The work had two intended functions and aims: 1) to provide information relevant to public policy decisions, and 2) to make a contribution to basic research in the Social Sciences. The project summarized in this report spans a period of seven years. The results are based on a panel of over 2000 young men, sampled from among tenth-graders in 1966 and followed for a total of four data collections concluding in 1970. The results show that a number of characteristics identify the potential dropout and among those dropouts and graduates who were employed, learning and job satisfaction ratings were not different on the average.
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YOUNG MEN IN HIGH SCHOOL AND BEYOND:

A SUMMARY OF FINDINGS FROM THE YOUTH IN TRANSITION PROJECT

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CONTENTS

	Page
Preface and Acknowledgments.	5
INTRODUCTION	7
Summary.	7
Overview	8
Objectives	8
A study of causes and effects of dropping out.	8
A study of family background and intelligence.	9
A study of differences among schools	9
A study of vocational programs in high schools	9
A study of post-high school environments	9
Additional objectives.	9
Research Design and Methods.	10
Sample and response rates.	10
Sources of bias in a longitudinal study.	11
Data collections from young men.	13
Data collections from school personnel	14
SUMMARY OF MAJOR RESULTS	15
The Impact of Family Background and Intelligence	15
Socioeconomic level.	15
Family size.	16
Broken home.	16
Family relations and parental punitiveness	17
Religious preference	18
Race	18
Intelligence and academic skills	19
Causes and Effects of Dropping Out of High School.	21
How many drop out?	21
The causes of dropping out	22
Educational attainment as a continuum.	23
Effects of dropping out: personality and behavior . . .	23
Employed versus unemployed dropouts.	24
Effects of dropping out: occupational attainment. . . .	24

Page

Vocational Programs in High Schools. 26
Background and abilities of vocational education students 26
Attitudes toward work. 26
Counseling received by vocational students 27
Dropout rates among vocational education students. . . 27

Differences Among High Schools and their Effects on Students 28

The Impact of Post-High School Environments. 28
Stability and change in the year following high school 29
College, work, military service, and "unemployed". . . 29
The college experience 30
The work experience. 31

Methodological Findings. 32
Strategies for longitudinal analysis of survey panel data 32

Additional Findings. 33
Youth views on national problems 33
Young men and military service 34
Drug use and attitudes 35
Young men's views on family planning and population problems 36

DISSEMINATION OF FINDINGS. 37

Monographs and Other Publications. 37
Coverage in the Mass Media 37
Data Archive 38

CONCLUSIONS AND RECOMMENDATIONS. 39

Dealing with "the Dropout Problem" 39
Family Background and Ability. 40
Racial differences 40
Vocational Education 41
High Schools and their Effects 41
New Educational Alternatives 43
Some Comments about Research Methodology 44
The uses of longitudinal designs 44
Some advantages of regularly-scheduled repeated data collections. 45
Future Work on the Youth in Transition Project 45

APPENDIX: PUBLICATIONS FROM THE YOUTH IN TRANSITION PROJECT. 47
Monographs 47
Special Reports. 47
Working Papers 48
Journal Articles 49
Chapters 49
Papers and Symposia. 49

TABLES

Table 1: Data Collections from Young Men. 12
Table 2: Data Collections from School Personnel 14

Preface and Acknowledgments

This report summarizes the major results of the Youth in Transition project, a longitudinal study of young men conducted by the Survey Research Center* under the primary sponsorship of the United States Office of Education.

The project began with many goals, and added more as time went on. There is much satisfaction in being able to look back now and see how much of the work has been accomplished--although, of course, there always remains more to be done.

Even more satisfying from a personal standpoint, however, has been the privilege of working with many talented and dedicated colleagues on the Youth in Transition project staff and elsewhere within the Institute for Social Research. While the writing of this final report was my assignment, the work reported herein has been truly a team effort.

Quite a number of individuals have served in one capacity or another on the staff of the project. All are acknowledged in the listing on the following page. Many others at the Institute have helped to collect and analyze the data reported here. Thanks are due to the members of the Sampling, Field, and Coding Sections, and the Computer Services Facility.

When the project began in 1965, Robert Kahn and I were co-principal investigators. Since that time Bob Kahn has been involved in a wide range of research activities and administrative responsibilities. He has, nevertheless, maintained an interest and involvement throughout the life-span of this project. His many contributions are deeply appreciated.

Several other colleagues have made a major professional contribution to the project over a period of some years. Martha Mednick, Terrence Davidson, Lloyd Johnston, and Jerome Johnston have given much in the way of hard and creative work. It has been a pleasure to collaborate with them.

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*The Survey Research Center is one of four divisions of the Institute for Social Research of The University of Michigan; the other centers are: Research Center for Group Dynamics, Center for Research on the Utilization of Scientific Knowledge, and Center for Political Studies.

**Additional support for some phases of the research has been provided by the United States Department of Labor, the United States Department of Defense, and the W.T. Grant Foundation.

Starting such a list of special contributions is much easier than stopping. Certainly each of those listed on this page has made special contributions to the project. Perhaps it is best to conclude by extending gratitude and appreciation to the principals and instructional staffs of nearly a hundred schools, and to several thousand young men--the people who so generously provided the data for the Youth in Transition project.

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INTRODUCTION

Summary

This report summarizes the major findings from the Youth in Transition project, a nationwide longitudinal study of young men in high school and beyond. Results are based on a panel of over two thousand young men, sampled from among tenth-graders in 1966 and followed for a total of four data collections concluding in 1970.

The major objective was to examine the causes and effects of dropping out of high school. A number of characteristics identify the potential dropout: low socioeconomic level, limited scores on measures of academic ability, poor school performance, limited aspirations, and above-average levels of delinquency are among the most prominent predictors. More than a score of personality and behavior dimensions were examined in an effort to determine the effects of being a high school dropout. Our clear conclusion was that there are very few changes of any consequence and virtually none that would support the argument that dropping out damages a young man's "mental health" or his basic self-esteem. Unemployment was higher than average among dropouts, but the difference between dropouts and graduates in employment rate is related primarily to pervasive differences in background and ability--factors which precede and help determine the act of dropping out. Among those dropouts and graduates who were employed, earnings and job satisfaction ratings were not different on the average.

Our fundamental conclusion based on these data is that dropping out should not be treated primarily as a problem in its own right, but rather as a symptom of other problems or limitations. Specific recommendations are: (a) sharply curtail mass media campaigns against dropping out, (b) concentrate any remedial efforts much earlier than high school (perhaps earlier than elementary school), and (c) broaden the range of educational options available to young people aged 16 to 18.

Other topics examined and summarized are: (a) effects of family background and intelligence, (b) differences among high schools in their effects on students, (c) vocational programs in high schools, (d) the impact of various post-high school environments, and (e) several additional areas of analysis including plans and behaviors related to military service, drug usage patterns, and attitudes toward illegal drugs. Final segments of the report discuss methodological lessons based on this research, and plans for future work.

Overview

This report is concerned with young men in their late teens. In particular, it deals with patterns of change, and also stability, which can be linked to family, high school, and post-high school environments. Our work has had two fundamental and interdependent aims: to provide information relevant to public policy decisions, and to make a contribution to basic research in the social sciences.

The project summarized in this report spans a period of seven years. During that period the study has grown and evolved, and we have enlarged the scope of our objectives as well as our procedures. We sampled more schools than were originally proposed. We conducted four major data collections from our panel of respondents, rather than the three we had planned. And our objectives were expanded in several directions, noted in the next section. Even the name of the project has evolved from the original title ("A Study of Youth in High School, at Work, and Unemployed") to the more general title "Youth in Transition."

This report is not intended to provide a detailed account of the research methods and findings of the Youth in Transition project. Such an accounting can be found in the several volumes and working papers listed in the appendix to this report. The purpose of this report is to present a concise overview of the major objectives, procedures, findings and conclusions of the project.

Objectives

The objectives of the project are multiple and overlapping. At a very general level, we can say that our interests have focused on many areas of growth and change in young men, including dimensions of mental health, the self-concept, values and attitudes, plans and aspirations, and behaviors. This general interest in growth and change can be linked to a number of more specific objectives:

A Study of Causes and Effects of Dropping Out. From the outset, the most important single issue in the Youth in Transition project has been an examination of the causes of dropping out of high school, and the effects of dropping out. It has long been known that dropouts differ from those who complete high school, but it was often difficult to know whether those differences were primarily causes or results of dropping out. A longitudinal design, one which studied young men both before and after they dropped out, provides a way of distinguishing between cause and effect, between dropping out as a problem in its own right and dropping out as a symptom of other problems.

A Study of Family Background and Intelligence. This objective derived quite naturally from our interest in dropouts. If we were to understand the causes of dropping out, it would be necessary to examine differences in family background and ability, and note how they are linked to attitudes and performance related to school, as well as many other areas of individual growth and development.

A Study of Differences Among Schools. Our examination of the effects of dropping out would provide a broad contrast between the experiences of those who did and did not remain in the high school environment during the final years before graduation. But the study design, using samples from nearly a hundred schools throughout the nation, also provided an attractive opportunity to look at contrasts among different schools. We set out to examine whether certain schools tended to produce certain patterns of changes in young men. We further hoped to discover what sorts of organizational characteristics distinguished the most "effective" schools.

A Study of Vocational Programs in High Schools. Recognizing that many high schools in the United States have tended to place primary emphasis on their role of preparing some students for college, sometimes at the cost of neglecting the non-college-bound, we concentrated special attention on vocational preparation, work-study programs, and the like.

A Study of Post-High School Environments. Our initial design and objectives were largely focused on the period during which young men were in high school--or would have been in high school if they had not dropped out. But both the design and our interests expanded to include a full year following the time of high school graduation. This permitted an analysis of various employment (or unemployment) experiences, including the somewhat special experience of military service. It also made possible an analysis of a broad range of post-high school educational experiences. We wanted to know what kinds of young men moved into these various types of environments after high school, and whether they changed in different ways as a result of being in one kind of environment or another.

Additional Objectives. The research objectives outlined above represent those basic to the work funded under our contract with the U. S. Office of Education. During the later years of the Youth in Transition project, a number of additional or "spin-off" objectives were developed. These "spin-off" efforts (which were always discussed and approved in advance by U.S.O.E. Project Officers) represented an enrichment of the project in two ways: they added important new substantive areas which had not been anticipated in earlier stages of the project, and they provided additional funds (some of which permitted an extra data collection).

The most important "spin-off" objective was the study of young men's plans, attitudes, and behaviors with respect to military service. Our interests included an examination of personality and behavior characteristics of young men who enlisted, as well as their reasons for enlisting. In addition, we set out to learn more about a variety of incentives to enlistment which might be effective in providing recruits in an all-volunteer force.

Several other "spin-off" objectives were developed late in the project, and relate to pressing social problems. We undertook an exploration of drug usage levels, attitudes toward drugs, and related matters. We also examined attitudes and expectations regarding family planning, and related them to levels of knowledge and concern about world and national population growth. Additional exploration was directed more generally toward youth attitudes about national problems.

In a later section we will say a bit more about these additional objectives of the research, and we will summarize a few highlights from the findings. For the present it is sufficient to note that these added topics have seemed quite consistent with the original major objectives of the Youth in Transition project; indeed, we think the original objectives have been enhanced.

Research Design and Methods

The research design* is described in detail in Youth in Transition, Volume I. Briefly, the design centers around a nationally representative panel of over two thousand adolescent boys who agreed to be surveyed repeatedly at intervals of a year or more. The first data collection took place in the fall of 1966, when the subjects had just entered tenth grade. Additional data collections occurred in the spring of 1968 (the end of eleventh grade for most boys), the spring of 1969 (just before most were graduated), and the late spring and early summer of 1970. (This sequence of four data collections represents an improvement over the three data collections projected in Volume I.) Additional data concerning school environments were obtained from principals, counselors, and samples of teachers in each of the schools which participated in the study.

Sample and Response Rates. The study began with 2213 tenth-grade boys located in 87 public high schools. The schools and boys were selected through a multi-stage sampling design in such

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*A complete citation of this monograph can be found in the appendix. Various monographs, working papers, and special reports will be referenced throughout this report; all can be found in the appendix.

a way that the probability of a school's selection was proportionate to its size (i.e., the estimated number of tenth grade boys), and roughly equal numbers of boys (about 25) were selected from each school. The net effect of this design is to provide an essentially bias-free representation of tenth-grade boys in public high schools throughout the United States. (A number of additional "discretionary schools" were included in the data collections, but analyzed separately. Unless otherwise noted, the findings reviewed in this report are based only on the major probability sample.)

Response rates for the initial data collection must be considered at two levels. A total of 88 schools were originally sampled and invited to participate; an affirmative response was obtained from 71, and replacement schools in the same geographic areas were secured for all but one of the remaining schools. In the resulting 87 participating schools, 2277 boys were invited to participate in the study. A total of 2213 (over 97 percent)

Table 1 presents a summary of data collections and response rates throughout the study. As the table indicates, more than 73 percent of the young men who began the study in 1966 continued their participation through 1970.

Sources of Bias in a Longitudinal Study. Two special types of bias are a possibility in longitudinal studies. First, it may be that certain types of individuals are especially likely to leave the panel of subjects, thereby biasing the sample that remains for later data collections. Second, it may be that repeated data collections will lead to changed answers; individuals who answer some of the same questions two or three years in a row may show systematic changes in responses simply because of the repetition.

The first problem has indeed occurred in our study. Because we had initial (Time 1) data from nearly all subjects in the sample, it has been possible to see how those who left the study were different (in initial characteristics) from those who continued their participation throughout the study. A summary of such differences has been included in the special report Drugs and American Youth. The single most important bias is that high school dropouts were much less likely to continue their participation throughout the project, thus the final data collection underrepresents the type of young men who drop out of high school. This bias, while a serious one, is not crippling. As we demonstrate in Volume III of the monograph series (Dropping Out--Problem or Symptom?), the dropouts who remained in the study seem quite representative of other young men who left the study and were identified as having dropped out of school. (These two groups of dropouts were very similar in average initial scores for intelligence, socioeconomic level, self-concepts, affective states, aspirations, etc.) In sum, there have been systematic changes in the panel of

TABLE 1

Data Collections from Young Men

	TIME 1	TIME 2	TIME 3	TIME 4
Date	Fall, 1966 (tenth grade)	Spring, 1968 (eleventh grade)	Spring, 1969 (twelfth grade)	Summer, 1970
Procedure	Individual interviews; group-administered tests and questionnaires	Individual interviews and questionnaires; $2 payment	Group-administered questionnaires; $5 payment	Individual interviews and questionnaires ; $10 payment
Location	Schools	"Neutral Site"	"Neutral Site"	"Neutral Sites"
Number of Respondents*	2213	1886	1799	1620
% of Original Sample (N=2277)	97.2%	82.8%	79.0%	71.1%
% of Time 1 Panel (N=2213)	100%	85.2%	81.3%	73.2%

*Probability sample located in 87 schools.

respondents as a result of non-participation in later data collections, but we have been able to identify the most important of these and take them into account.

The second problem, repeated measurement effects, was explored by using a small "control group" sample of individuals who were selected at the time of the initial data collection (1966) but not contacted until the fourth data collection (1970). About one hundred such "control" subjects completed the fourth data collection, and their responses were compared with matched subjects from the regular sample. The results clearly indicated the absence of repeated survey effects; those who had been participating in the study for nearly four years gave just the same sorts of answers as did their matched classmates from the "control group" who were answering for the first time.

Data Collections from Young Men. The initial data collection from young men took place in their schools and during school hours. Individual interviews were conducted with all respondents by the Survey Research Center's staff of trained interviewers. After all interviewing had been completed in a school, the participants as a group spent a morning or afternoon completing a battery of tests and questionnaires. The group sessions were conducted by the interviewers, following standardized instructions.

Later data collections were limited to interviews and questionnaires and were conducted at "neutral sites"--locations such as library conference rooms, community centers, church basements, and the like. (Since it was important to have the interviewing conditions as similar as possible for dropouts and stayins, it was considered undesirable to conduct these interviews in school buildings. It was also undesirable to collect the data in respondents' homes, since the potential lack of privacy might have interfered with frank and open answers to some rather personal questions.) Interviewers arranged "neutral sites" in the same general neighborhood as the schools used in the initial data collection, then contacted respondents (usually by phone) to arrange individual appointments. Table 1 includes a brief summary of each of the four data collections.

A large number of dimensions were measured in the four data collections from young men. The initial data collection included tests of ability and academic skills, measures of family background characteristics, and a large number of "criterion" dimensions: affective states, self-concepts, values and attitudes, plans, and behaviors. These measures need not be reviewed here; they are described extensively in Youth in Transition, Volume I, and a number of them will be cited in our summary of major findings. But it is worth noting that most of the criterion dimensions were repeated in all four data collections, thus permitting a fairly detailed assessment of change during the four-year span of the longitudinal design.

Data Collections from School Personnel. A wide variety of school characteristics were assessed in spring of 1968 using paper-and-pencil questionnaires administered by mail to principals, counselors, heads of counseling, and teachers in each of the participating schools. (The topics covered in the questionnaires are summarized in "Working Paper 9: Conceptualizing the High School as a Social System.") At the time of the original data collection from boys in fall of 1966 it was explained to principals that a later effort would be made to measure school organizational characteristics, but it was understood that school participation in the data collection from boys did not imply a commitment to participate in the school organization phase of the research. Nevertheless, in all cases full participation was obtained in the measurement of school characteristics. Response rates and numbers of participants are summarized in Table 2.

TABLE 2

Data Collections from School Personnel

	Number of Respondents	Percent of Sample Responding
Principals	87	100%
Teachers	2100	70%
Counselors	320	87%
Heads of Counseling	86	99%

SUMMARY OF MAJOR RESULTS

This section presents the major findings of the Youth in Transition project. Primary attention is given to the results that bear on our contract with the U. S. Office of Education, but we have also included highlights of the additional "spin-off" analyses that grew out of the main project.

All of the results reviewed here have been reported in far greater detail in working papers, special reports, and/or monographs. These source documents will be cited where relevant, and the reader who wishes additional information is urged to consult them.

The Impact of Family Background and Intelligence*

A large number of family background characteristics were examined in the Youth in Transition project. The most central dimensions are reviewed here.

Socioeconomic Level. Socioeconomic level (SEL) is perhaps the most fundamentally important of the family background measures examined in the Youth in Transition study. It is related to most other background measures; indeed, what appear to be "effects" of other background dimensions can sometimes be attributed equally well (and with greater parsimony) to SEL.

The summary measure of SEL used in this study consists of six equally-weighted ingredients: father's occupational status, father's educational level, mother's educational level, number of rooms per person in the home, and a checklist of other possessions in the home. These highly intercorrelated ingredients all relate to the quality of home environment available to children. (They are also, of course, likely indicators of genetic endowment; therefore, we cannot conclude that the relationship between SEL and other characteristics represents only the effect of environment.)

Socioeconomic level shows consistently strong relationships with measures of intelligence, vocabulary skill, and reading comprehension. Given strong correlations with measured ability, it is not surprising to find that SEL is also related to young men's perceptions of their own school ability; but it is important to note that even after intelligence and other background factors are controlled statistically, a moderate association remains between SEL and self-concept of school ability.

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*The findings summarized in this section are based largely on Volume II in the monograph series (The Impact of Family Background and Intelligence on Tenth Grade Boys), and to some extent also on Volume III (Dropping Out--Problem or Symptom?).

Socioeconomic level is associated with a number of other dimensions reflecting attitudes and behaviors relating to school. School grades are positively correlated with SEL; so are college plans and occupational aspirations. Negative attitudes toward school, test anxiety, and rebellious behavior in school are all greater among low SEL students.

Dropping out of high school occurs most often among those from low SEL homes, and least often among those from high SEL homes. The reverse is true for college entrance; the higher the SEL the more likely a young man is to enter college.

Family Size. Family size, or the number of siblings a boy has, shows a fairly substantial relationship with socioeconomic level. About half of our respondents reported two or fewer siblings, and within this range there is no appreciable association between family size and SEL. However, larger families tend also to be low in SEL. A similar pattern appears when family size is related to tests of intelligence and ability; as the number of siblings increases beyond two, average test scores gradually decline. When the effects of SEL are removed statistically, the relationship between family size and test scores is reduced but by no means eliminated.

The young men in our sample who came from small families were higher in self-concepts of school ability, academic achievement (grades), college plans, and occupational aspirations. Negative school attitudes were more prominent among those from larger families. Part of these relationships can be attributed to differences in socioeconomic level, but a portion of the effect remains in each case after controlling for SEL.

Family size is related to dropping out of high school; boys from large families were about three times as likely to drop out as those from small families. Those from large families were also much less likely than average to attend college. These differences, like the other effects of family size, are diminished when SEL is controlled, but they do not disappear.

Broken Home. We found it useful to distinguish between homes broken by death and those broken by separation (usually by formal divorce). With few exceptions, homes broken by death were found to be similar to intact families in terms of socioeconomic level and number of siblings, whereas those broken by separation were more often large families and those at low socioeconomic levels. Families disrupted by separation also tended to show poorer than average parent-son relationships, while those broken by death did not.

Most differences associated with broken homes involved homes broken by separation, and seemed largely explainable in terms of their lower socioeconomic level. One important exception is drop-

ping out of high school. Dropping out is roughly twice as likely among boys from broken homes, and much of this difference remains after controlling SEL.

Family Relations and Parental Punitiveness. A single, general-purpose measure of family relations (or parent-son relations) was developed using 10 items having to do with parental punitiveness and 11 items dealing with closeness to parents and the feeling that parents are reasonable. The items in this scale are fairly subjective; thus there is much room for subtle distortion and misinterpretation of response scales, all of which can occur without a respondent even recognizing it. This measure is not strongly associated with other family background dimensions, but there is some tendency for parent-son relations to be better in smaller, intact families high in socioeconomic level.

The family relations measure shows strong relationships with a number of measures of interest to us here. The better a boy reports getting along with his parents, the higher is his self-esteem, his self-concept of school ability, his attitudes toward school, and his feelings of personal efficacy. The poorer the family relations he reports, the more likely the boy is to admit to delinquency, rebellious behavior in school, test anxiety, and negative school attitudes. Considerable caution was exercised in reporting these findings in Volume II, for all of the measures mentioned above are highly subject to bias or distortion.

The problems of bias are diminished, however, when a measure of family relations obtained at the start of tenth grade is related to subsequent objective behaviors such as dropping out and college entrance. Our analysis clearly indicated that the better a boy reported getting along with his parents at the start of tenth grade, the less likely he was to drop out of high school and the more likely he was to enter college.

An exploration of the separate components of the family relations measure revealed that the relationships with dropping out and college entrance were attributable almost entirely to the 10 items dealing with parental punitiveness. Since the punitiveness measure was obtained in tenth grade, before the dropping out occurred, it is tempting to argue that parental punitiveness is among the direct causes of dropping out. This may indeed be true, but it is not the only plausible explanation for the relationship. Some of the behavior patterns which provide the best predictions of dropping out--things such as poor school performance and high levels of delinquency--are the very kinds of behavior likely to produce a punitive reaction from parents. Perhaps it would be best to conclude that parental punitiveness is part of the mix of forces that precede dropping out, and it may often be both a reaction and a contributing factor.

Religious Preference. The religious preferences of the young men in our study corresponded very closely to family religious views; thus it seemed appropriate to treat religion as an aspect of family background experiences. In general, most differences among young men of different religious viewpoints could be interpreted as simply reflecting socioeconomic level and intelligence; in other words, a concise account of background effects would focus on SEL and intelligence and say rather little about effects of family religious preference. The one exception to this generalization involves the 59 Jewish respondents in our study. This subgroup, representing less than 3 percent of our total sample, has departed from the average in ways that cannot be attributed entirely to their above-average intelligence or socioeconomic level. Jewish respondents scored above any other religious subgroup in self-esteem, political knowledge, occupational aspirations, and college plans.

Not one of the Jewish respondents dropped out of high school. Within a year of graduation, over 90 percent had entered college. (This may be contrasted with 51 percent college entrance among the next highest religious category, the Episcopalians.) Roughly half of these differences in educational attainment could be attributed to intelligence, SEL, and other background factors; the effects remaining after such statistical controls are still quite large and important.

These findings for Jewish respondents are based on only a few cases; taken alone, they must be treated with a good deal of caution. But the results presented here are consistent with other findings, and together they indicate that the family background of Jewish children is particularly supportive of high self-esteem and high levels of achievement orientation.

Race. Race has been treated as a background factor in our research because large and pervasive racial differences in levels of education, occupation, income, housing, and the like exist in the United States. Racial differences were apparent in our data, and in spite of limitations in a sampling design that was not intended to study racial subgroups, we felt compelled to report our findings in this area.

Probably the most basic finding is the fact that the 256 black respondents in this study cannot be studied as a single subgroup. No less than three groups of blacks must be considered, based on different school (and community) environments: blacks in integrated schools, blacks in northern segregated schools, and blacks in southern segregated schools. We found in preliminary analyses that black students in integrated schools were very different from those in segregated schools in terms of test scores and socioeconomic level; we then found that those in southern seg-

regated schools were quite different from those in northern segregated schools. Given these differences in socioeconomic level and test scores, we decided that these three black subgroups would be examined separately throughout our study.

Blacks in integrated schools did not differ from whites in rates of dropping out and college entrance. Those in segregated schools, and especially northern segregated schools, showed higher dropout rates.

Other racial differences were found, but none were as large as those involving test scores and socioeconomic level. Along both of these dimensions, the major differences did not lie between whites and all blacks. Rather, we found that blacks in integrated schools were quite similar to whites, while blacks in northern segregated schools were somewhat lower on both SEL and test scores, and blacks in southern segregated schools were much lower. In short, we found that black respondents were not homogeneous in intelligence, and so-called "racial differences" in test scores were better interpreted as involving region and segregation as well as race.

As we noted in Volume II of the monograph series, to say that the low scores of the southern segregated blacks are the fault of their schools exclusively would ignore some other very important findings. Our interpretation would be that the black respondents in southern segregated schools are the products--indeed the victims--of a social system of segregation and discrimination far more pervasive than schools alone. It is quite beyond the scope of this study to determine what portion of the low scores of this group can be assigned to the effects of schools, the wider social milieu, the effects of pre-natal and post-natal malnutrition, and other factors shown by previous research to be important. Nor can we say with complete certainty that the racial differences we have observed are solely the products of environment--our data are certainly not precise enough to rule out all possibility of hereditary differences. But the most parsimonious explanation of these data, in our view, is in terms of the massive environmental differences that exist among the racial subgroups we have been examining.

In spite of limitations in sampling design and sizes of subgroups, we feel that the data on test scores and race add evidence to the view that so-called "racial differences" are primarily--if not exclusively--differences in cultural and educational opportunities.

Intelligence and Academic Skills. A number of tests were administered during the initial (tenth-grade) data collection. The three most important were the individually-administered Ammons Quick Test of Intelligence, and group-administered tests of vocabulary skills (the General Aptitude Test Battery--Part J) and

reading skills (the Gates Test of Reading Comprehension). In our view there is little to be gained from trying to maintain a sharp distinction between intelligence and verbal (or academic) skills. Even if one were satisfied with such distinctions at the conceptual level, our measure of intelligence (like most others) is heavily dependent upon verbal skills. (It should be added that the original test battery included a number of non-verbal tests of intellectual functioning; we concluded that these tests turned out to be just as "culture-unfair" as the more standard tests.) Although there is a great deal of overlap among the three tests listed above, it is also the case that educational attainment is more accurately predicted by the vocabulary and reading skill tests than by the general-purpose test of intelligence. In other words, we can do a better job of predicting dropping out and college entrance when we use tests that are closely linked to academic performance.

The test scores are, not surprisingly, closely associated with background factors. The question therefore arises--to what extent are relationships with test scores a reflection of family background effects? This issue was examined at some length in Volume II of the monograph series, where we argued that intelligence lies in the middle of the following causal sequence: family background influences intelligence which in turn influences various criterion dimensions. Such a variable in the middle of a causal sequence can be termed an intervening variable. Many of the relationships between family background, intelligence, and criterion measures can be interpreted largely in these terms.

A variety of school-related dimensions are correlated with test scores. One of the most obvious is self-concept of school ability; those with higher test scores show a strong (and realistic) tendency to rate themselves relatively high in academic ability. Brighter boys also have fewer negative school attitudes, and are slightly less likely to show test anxiety and rebellious behaviors in school.

Self-esteem shows a modest positive correlation with intelligence. Similar correlations also occur between intelligence and measures of internal control (or personal efficacy), and needs for self-development and self-utilization. These effects seem quite consistent with reality, particularly the reality experienced by a high school student. The bright student does better in school, finds it more satisfying to develop and utilize school-related abilities, and is better able to control events--rather than being controlled by events.

Intellectual skills are strongly associated with occupational aspirations and plans for college. Some of this reflects family background differences operating through intelligence as an intervening variable. On the other hand, a good deal of family background effects on aspirations do not seem to operate through the

intervening variable of intelligence. After giving intelligence its full due, we find that background has a very large role remaining. Put more simply, this means that if two boys are equal in intelligence, their plans for the future may still be quite different, and family background is among the major causes of such differences.

Actual entry into college is, of course, positively related to intellectual skills. Those who would later enter college averaged the equivalent of about ten IQ points above their non-college-bound high school classmates.

Equally obvious is the fact that dropouts had lower test scores than those who graduated. What may be surprising is that the differences were not really very large (about the equivalent of five IQ points, on the average) between dropouts and those stayins who did not go on to college. We see here an instance of a frequent finding in comparing dropouts with stayins--the larger differences usually lie between the college and non-college groups rather than between those who do and do not drop out of high school.

Causes and Effects of Dropping Out of High School*

The major conclusions from our analysis of high school dropouts can be stated quite briefly:

Dropping out of high school is overrated as a problem in its own right--it is far more appropriately viewed as the end result or symptom of other problems which have their origin much earlier in life. The difficulties experienced by the dropouts we studied--the low aspirations and accomplishments, and even the limitations in self-esteem and self-concept--were already present or predictable by the start of tenth grade, and there is little evidence that dropping out made matters worse.

A related conclusion is that educational attainment is a continuum, with high school dropouts at one end of the scale and college entrants at the other end.

Before reviewing some of the evidence which led to these conclusions, let us examine the size of "the dropout problem."

How Many Drop Out? The proportion of young men in the United States who drop out of high school has been declining throughout this century. In 1900 about ninety percent of male students failed to receive high school diplomas. By 1920 this figure was about

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*The findings summarized in this section are reported in detail in Volume III in the monograph series (Dropping Out--Problem or Symptom?).

eighty percent. It was not until the 1950's that the dropout rate was cut below half. The dropout rate declined to about thirty percent by 1965. Our own findings suggest a dropout rate of about 18 or 19 percent among young men in the high school class of 1969. These figures represent a very close agreement between data provided by principals and data provided by the young men in our sample (including a careful estimate of dropout rates among those who could not be tracked down in our follow-up data collections). It should be noted that our own estimates of dropout rates are based on those who entered tenth grade. Since very few young men drop out before that point in time, the total dropout rate is not likely to be much higher than twenty percent.

It should be added that we have defined as dropouts all individuals who interrupt their full-time attendance in high school for more than a few weeks. About one in five such "dropouts" who participated in the final data collection had already earned diplomas by returning to regular high school, going to night school, or taking equivalency exams, and most others expressed an intention to gain their diplomas. This is clear evidence that most dropouts accepted the view that a high school diploma is important and worth working for.

The Causes of Dropping Out. The family background and ability factors related to dropping out have already been reviewed in the preceding section. Dropping out is more likely among boys from homes with the following characteristics: low socioeconomic level, large numbers of siblings, loss of a parent due to death or separation, parental punitiveness. Test scores are also strongly predictive of dropping out.

Two of the most important predictors of dropping out are poor classroom grades and being held back. We estimate the dropout rate to be about 40 percent among those boys who have failed a grade in school, in contrast to 10 percent among those never held back. It would be tempting to argue from this that no one should ever fail a grade in school, lest he become a dropout. That conclusion may in the end prove to have some validity, but the present data are not sufficient to make the case. All we can say at this point is that being held back a grade is part of the past school experience of over half of the boys who later become dropouts; whether it is an important cause in its own right, or merely a very revealing symptom, remains to be demonstrated.

Measures of rebellious behavior in school, and more general measures of delinquent behavior, show a strong relationship to dropping out. Boys with an established pattern of rebellious and delinquent behavior are more likely to become high school dropouts. Some, of course, might be labelled "push-outs"--those delinquent and disruptive individuals who are invited to leave "for the good of the school." But others leave in the absence of coercion, and (according to their accounts in interviews) sometimes they leave in spite of pressures from parents and teachers to remain in school. Perhaps for some of these boys dropping out is itself a form of rebellious or delinquent behavior--just one more instance of doing what authority figures tell them not to do.

Are there other "personality" characteristics which distinguish those boys most likely to become high school dropouts? A number of relevant dimensions were examined; the results, while not as strong as some reported above, suggest that the potential dropout is (a) lower than average in self-esteem, needs for self-development, commitment to contain social values, and feelings of personal efficacy; and (b) higher than average in somatic symptoms and negative affective states. The potential dropout is also lower than average in occupational aspiration.

This review of the causes (or, more accurately, the precursors) of dropping out surely fits the stereotype of the dropout as a "loser"--a young man who is delinquent, low in self-esteem, lacking in ambition, and unable to control his own destiny. But there are two cautions to be kept in mind: First, the dropout was a "loser" long before he dropped out--dropping out is the symptom, not the cause. Second, a number of these differences which appear "on the average" are not really very large; there is a substantial range of overlap between dropouts and stayins--especially those stayins who do not go on to college.

Educational Attainment as a Continuum. Each of the dimensions outlined above predicts not only dropping out but also college entrance. If those lowest in socioeconomic level and academic ability are most likely to become dropouts, those at the highest levels are most likely to enter college. A similar conclusion holds for other family background characteristics, test scores, past school experiences, and the like.

We take this pattern of findings as confirmation for the view that educational attainment is best studied as a continuum. In addition, it is a matter of practical importance in any study of dropouts whether the comparison or "control" subjects include all stayins, or only those stayins who did not go on to post-high school education. Why should this matter? Because in most respects dropouts are not so very different from those who end their education with high school graduation; it is more often the ones who go on to college who really stand apart.

Effects of Dropping Out: Personality and Behavior. More than a score of personality and behavior dimensions, measured over a span of nearly four years, were examined in an effort to determine the effects of being a high school dropout. Our clear conclusion was that there are very few changes of any consequence and virtually none that would support the argument that dropping out damages a young man's "mental health" and his commitment to society's values. This conclusion is based on a wide variety of scales including self-esteem, feelings of personal efficacy (internal control), negative affective states, somatic symptoms, aggressive impulses, needs for self-development and self-utilization, social and academic values, attitudes about government and public issues, delinquent behaviors, and occupational aspirations.

This lack of evidence for differential changes among dropouts versus stayins should not be taken to mean that there are no differences on the average between these groups. As noted earlier, we found a number of differences between dropouts and stayins. But because our study involved a "before-and-after" research design, it was possible to see that in nearly every case a difference which turned up at the end of the study was present and equally strong at the start--before the dropping out occurred. For example, we found that dropouts were above average in delinquency throughout the entire study, and there is no indication that this delinquency increased (or decreased) as a result of dropping out.

Employed Versus Unemployed Dropouts. An examination of employed versus unemployed dropouts, while based on only a limited number of cases, led to essentially the same sort of conclusion as did our other findings. We found self-esteem lower and delinquent behavior higher among the unemployed dropouts when compared with dropouts who were working. But which is cause and which is effect? Did the unemployment lead to the lower self-esteem and higher delinquency, or is it the case that young men with patterns of delinquent behavior and low self-esteem are less likely to find and keep jobs? Of course, these two lines of causation are not mutually exclusive, and it could be the case that both are at work in a kind of vicious cycle. But our longitudinal data suggest that this is not the most likely explanation. We found that differences which were evident at the end of the study had been there all along, and were just about as large at the beginning (when all were students in tenth grade) as they were at the end. Thus it seems clear that the low self-esteem and high rates of delinquency came first, and should not be viewed as the unfortunate results of dropping out and being unemployed.

Effects of Dropping Out: Occupational Attainment. In many ways the heart of the argument against dropping out is that those without a high school diploma are less likely to get jobs, and the jobs they do succeed in getting are relatively unattractive and pay poorly. This economic argument places heaviest stress on the value of the high school diploma as a credential--an admission card into the world of work.

Limiting our analysis to those in civilian life, we found that among dropouts without diplomas* a total of 71 percent were employed 30 hours or more per week (at the time of the final interview); the comparable figure was 87 percent for high school graduates (i.e., those who were not primarily engaged in post-high school education). This finding would surely appear to justify the radio and television commercials which claim that "...if you drop out of school you double the risk of not getting a job--any job."

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*Some young men identified as dropouts later earned diplomas, either by returning to school or through equivalency tests, etc. These "dropouts with diplomas" were omitted from the present analysis of occupational attainment.

But let us take a closer look at that claim. The clear implication is that dropping out causes the higher rate of unemployment. But when we consider that dropouts achieve relatively low scores on tests of intelligence, and when we further note that the dropouts come predominantly from lower socioeconomic levels, we must ask: Is dropping out the cause of greater unemployment, or is it primarily a symptom of other more basic factors that cause unemployment? We found that we could do a better job of predicting unemployment using our measures of family background and ability than by using dropout data, but we made the best predictions using both kinds of information. We conclude that dropping out probably makes it more difficult to obtain employment; however, the more important causes of unemployment are those pervasive differences in background and ability which precede and help determine the act of dropping out.

Thus while unemployment rates may be twice as high among dropouts as among stayins, it is very misleading to claim that the act of dropping out will double a young man's chances of being unemployed. That difference in unemployment rates is caused primarily by family background and ability factors, and these things are not changed when a young man drops out of school.

Of course, the majority of both dropouts and graduates in the labor force were gainfully employed. When we compared employed dropouts with employed high school graduates, we found their weekly income levels to be nearly identical. (Actually, the small and statistically untrustworthy difference which did appear was in favor of the dropouts, who earned a few dollars more per week than the high school graduates.) One might attribute the lack of an income advantage on the part of high school graduates to seniority differences--they had been on the job for a shorter time than the dropouts. But even after we matched dropouts and graduates according to length of time on the present job, we still found no advantage on the part of graduates. We cannot, of course, answer the argument that the long-range earnings of graduates will be higher--at least not without further follow-ups of the Youth in Transition respondents. But we can say that in the short run there is little justification for the assertion that dropouts who do get jobs will earn less than their counterparts who finished high school.

There is also little justification for the view that dropouts get less satisfying jobs. Three-quarters of the dropouts rated themselves "quite satisfied" or "very satisfied" with their jobs, while two-thirds of the graduates expressed similar levels of satisfaction. Additional ratings of job characteristics showed little in the way of consistent differences between dropouts and graduates; certainly it was not the case that dropouts showed less job satisfaction than graduates.

In sum, our examination of the causes and effects of dropping out indicates that the differences between dropouts and stayins are largely stable and reflect causes rather than effects. Dropping out is thus more a symptom than a problem. We will turn later to possible policy implications based on this conclusion.

Vocational Programs in High Schools*

The analysis of vocational education programs in high schools consisted largely of a comparison among four major curriculum categories: vocational, college preparatory, business, and general. At each of the first three data collections (sophomore, junior, and senior years), the college preparatory program included the largest percentage of boys, with the general program running a close second. The vocational program included upwards of ten percent of the sample at each data collection, and the business program involved about half that number.

There was, of course, a good deal of movement among programs from sophomore to senior years; but this movement was far from equal across programs. Over three quarters of those in vocational programs at the end of their senior year had "transferred in" from other programs (mostly from the general program). A similar pattern occurred among those in business programs. On the other hand, more than two thirds of the seniors in college preparatory programs had been in those programs consistently throughout high school.

Background and Abilities of Vocational Education Students. Vocational education students came from lower socioeconomic level families, on the average, than students in the other curriculum categories. The differences were most pronounced between the vocational students and those preparing for college--nearly a full standard deviation. Similar differences were found in tests of intelligence, reading ability and vocabulary skills.

When asked to provide a self-rating of school ability, the typical student in a vocational program rated himself "slightly above average." (In fact, this represents a lower than average score, since most students rated themselves even higher.) Again, there was nearly a full standard deviation difference between mean self-ratings by vocational and college preparatory students.

Attitudes Toward Work. When asked to rate a number of statements contrasting school with work (e.g., "Instead of being in this school, I wish I were out working."), the college preparatory students were much stronger in their endorsement of school than were the vocational, business, and general students. We cannot be sure to what extent this reflects positive attitudes toward work versus negative attitudes toward school, but in any case it seems likely that vocational students are likely to prefer course work that seems less like "school" and more like "real work."

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*This segment of the report is based on "Working Paper 8: Vocational Education--Its Place in Public Schools," by Joseph Johnston and Terrence Davidson.

A comparison was made among students in work-study programs, those holding other (non-work-study) part-time jobs, and those who did not work during high school. There were some consistent differences in background, abilities, and attitudes among the groups, but very little evidence of differential change in occupational attitudes or aspirations. Having a part-time job during high school no doubt matters a good deal to the young men involved, but not in ways that are reflected clearly in our criterion measures.

Counseling Received by Vocational Students. Vocational education students reported spending far less time with counselors than did other students. For example, one third of the vocational students had not visited once with a counselor during the senior year, whereas that was true for less than one in ten college preparatory students. But the counseling needs of vocational students were apparently fairly high; 41 percent of the vocational education students versus 27 percent of those in other programs wanted more time discussing procedures and applications for post-high school jobs.

On the other hand, vocational students did receive a considerable amount of job-related counseling from their vocational education teachers. Full-time vocational teachers talked individually with 54 percent of the boys in their classes concerning occupational choices; and they talked with 49 percent concerning plans for post-high school education. These percentages were considerably higher than the corresponding percentages for non-vocational education teachers (22 percent and 27 percent respectively).

In short, vocational education students received counseling from both counselors and teachers, but they relied on teachers to a greater extent than was true for students in other programs.

Dropout Rates Among Vocational Education Students. Vocational education students had higher than average dropout rates. But this was equally true of students in business and general programs --all were about three times more likely to drop out than college preparatory students. These differences in dropout rates were largely predictable, given the fact that college preparatory students were higher in average in socioeconomic level, test scores, and past school performance. Along these same dimensions, all of which are predictors of dropping out, the vocational education students averaged lower than any other curriculum category. In other words, those students who entered vocational education programs were more "dropout prone" than average.

Given that the vocational education students were relatively "dropout prone," the question arose: Does being in the vocational program increase or decrease the likelihood that a young man will drop out of high school? The results of our analyses clearly indicate that after adjusting statistically for differences in family background, ability, and past school performance, vocational

students actually dropped out a bit less frequently than would have been expected. By way of contrast, students in the general curriculum dropped out more often than would have been expected--their adjusted dropout rate was about one-third higher than that of vocational, business, and college preparatory students.

In sum, the vocational education programs attract a considerable proportion of "dropout-prone" individuals--as do all programs except college preparatory. But being in a vocational program does not increase the likelihood of actually dropping out; if anything, vocational programs may have a slight tendency to reduce dropping out.

Differences Among High Schools and their Effects on Students

We set out to measure high school characteristics along a great many dimensions. These measures were refined and narrowed down to a limited (but still large) set of items and indexes. (The process is described in some detail in "Working Paper 9: Conceptualizing the High School as a Social System.")

Our primary reason for measuring school characteristics was to search for those characteristics which distinguished "effective" schools--schools where students grew in self-esteem, or positive self-concepts, or realistic occupational aspirations, etc. It would be satisfying indeed to be able to say at this point that certain schools did seem to be "effective" by such criteria; and it would be even more satisfying to describe the major characteristics of these schools so that other schools might emulate them. Alas, our efforts to isolate such school effects have been notably unsuccessful. After several years of intensive analysis (summarized in "Working Paper 9" and "Working Paper 10"), we have been forced to a conclusion similar to that reached a few years earlier by James Coleman and others in their study of academic ability and achievement in schools throughout the United States. We found differences between schools, to be sure, not only in test scores, but also in educational and occupational aspirations, values and attitudes, affective states, and so on. But when we sought the causes of these differences, we found almost invariably that they could be attributed to individual differences in background and basic abilities. In short, the differences among schools in our study appear to be due to input characteristics rather than genuine school effects.

The Impact of Post-High School Environments*

Our longitudinal examination of young men during the high school years produced little evidence of change as a function of

*This segment of the report was co-authored by Barbara Thomas.

different school environments, or as a function of dropping out of high school. In the last phases of data collection and analysis, we turned our attention to an examination of the effects of different post-high school environments. The results are detailed in "Working Paper 10," and summarized briefly below.

Stability and Change in the Year Following High School. We noted in our review of the research on dropouts that most dimensions of personality and behavior showed very little change over the four-year span of the study. This general conclusion is confirmed by our examination of the impact of post-high school environments. There were differences between those who went to college, those who entered military service, and those who took civilian jobs; but most of these reflected stable characteristics--differences which were present before entering the several contrasting post-high school environments.

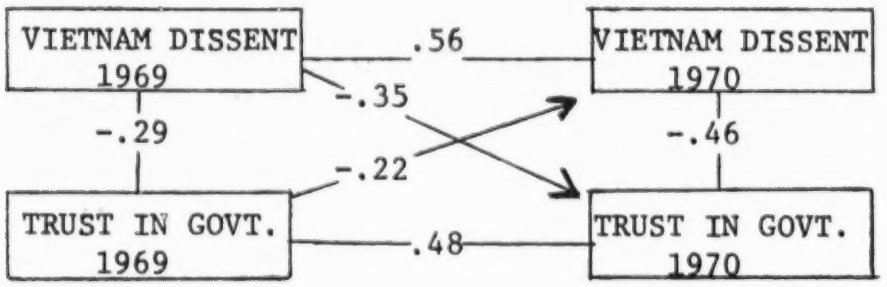
There are some exceptions to this general conclusion, however. Changes in attitudes about "social issues" did occur, as well as some shifts in occupational aspirations. We review these changes here, beginning with a comparison of college and non-college environments, then looking at differences among several aspects of college environments, and several dimensions of work environments.

College, Work, Military Service, and "Unemployed." After high school a young man can go on to further education, enter military service, take a civilian job, or be categorized as "unemployed." A comparison of these major categories uncovered several noteworthy patterns of change.

Long-range occupational aspirations were consistently different among the several groups outlined above. Those who entered college had higher status aspirations than did any other group, and this pattern was evident in their tenth-grade career choices as well as the later ones. Those who entered military service showed a modest tendency to raise their occupational aspirations during the year following high school. Not surprisingly, those who were unemployed showed a sharp drop in status of their long-range occupational plans. Those entering civilian employment remained about the same.

In the year following high school each group except those in military service showed an increased dissatisfaction with the United States role in Vietnam; the change was by far the greatest among those in colleges and universities. A scale of "trust in government" showed a decline during the same period (in fact, it had been declining steadily throughout high school). Again, the decline was greatest among college and university students, but even those in military service showed some decrease in confidence in the government.

The pattern of cross-time correlations between the two measures suggests that Vietnam dissent is more a cause of government mistrust than vice versa. The data are displayed below (all are product-moment correlations).



In sum, our findings show a widespread pattern of eroded trust in government linked to dissatisfaction with United States policy in Vietnam. Those headed for college showed average discontent before they left high school, but after the freshman year a wide gap developed as college students showed a sharp drop in satisfaction with government and military policy.

The College Experience. Changes among college students occurred not on personality and behavior dimensions but rather on social issues and political awareness. We noted above that increased dissent over Vietnam policy and distrust in government were especially strong among college students. Other dimensions which showed greater than average changes were political knowledge and perceptions of racial discrimination.

For all of these social issue dimensions, we found an ordering according to area of college major (or expected major). Highest in dissent, political knowledge, and perceptions of racial discrimination were social science majors, followed by those in the physical sciences and mathematics, with lowest scores for those having vocational education and business majors. This ordering was evident in the 1969 scores, prior to high school graduation; but the ordering became accentuated after a year of post-high school education, with those already high showing the greatest increases and those relatively low showing lesser increases.

A similar pattern of initial differences plus differential changes was found when we compared different levels of "college quality." In general, the higher the rated quality of the school, the more the dissent and political awareness.

For both dimensions noted above, college major and college quality, we found evidence of both selection and socialization. There were initial differences in the students who entered different colleges and chose different areas in which to major; but these differences seemed to grow larger during the freshman year, suggesting that the social context may have served to reinforce and enhance the initial differences.

30

College grades represent one measure of success in the new educational environment. We found that those with the highest grades in college described the "fit" between their own needs and the college environment in the most positive terms, while those with the poorest grades reported less good "fit." While that finding seemed fairly obvious, a related one was not. We looked to see whether those who did especially well in college had been just as satisfied with their high school experience as they were with college, and found that they were not. While those who did moderately well in college grades had earlier been quite satisfied with their "fit" in the high school environment, those who did best in terms of college grades had not been fully satisfied with their high school experience. It seems quite likely that these high-achieving college students were not sufficiently challenged during their high school years.

The Work Experience. Unlike our findings for the college experience, we found that aspects of the work experience did not relate highly to social issues, but rather to such dimensions as occupational aspirations and needs for self-development.

There was a clear positive association between the status rating of the post-high school occupation and such dimensions as self-esteem, needs for self-development, and status of long-range occupational aspiration. These relationships were evident in the data from Time 3 (just prior to high school graduation), but the patterns were stronger a year later, after the young men had been working. Young men in the highest status jobs after high school averaged highest in self-esteem, self-rated needs for self-development, and long-range occupational aims.

Thus we found here, as in the case of college students, a tendency for initial differences to be associated with the types of post-high school environments chosen and attained, plus a tendency for those initial differences to be heightened during the year spent in the new environment.

Methodological Findings

A number of methodological issues arose because of the longitudinal nature of this research effort. Some have already been mentioned. We noted that a special control group was used to examine repeated interviewing effects, and no such effects were evident. And we discussed panel attrition--the tendency for some respondents to be lost from follow-up data collections. Although follow-up response rates were quite good, there was a tendency for dropouts to be underrepresented in follow-ups. Our procedures for dealing with this methodological difficulty are detailed in Volume III of the monograph series. There is also underway a more extended examination of the characteristics of those individuals who "dropped out" of the longitudinal design; but it will be some months before that effort is completed.*

Some other methodological issues can be mentioned briefly. An examination of possible "mail-back bias" in questionnaire returns from our sample of teachers, detailed in "Working Paper 6," led to the conclusion that those teachers who responded only after the second or third prompt (by letter and/or telephone) gave the same sorts of answers as those who needed no prompting, thus providing little evidence of bias. A number of strategies have been employed in developing composite measures of school characteristics and seeking for "school effects" on students; these have been mentioned in the preceding section, and they are detailed in "Working Paper 9" and "Working Paper 10."

** Strategies for Longitudinal Analysis of Survey Panel Data. One methodological area which deserves a more detailed review here involves our use of longitudinal data to draw conclusions about change and the causes of change. On first blush the problem of measuring change may seem deceptively simple--one looks at a "before" measure and compares it with an "after" measure and the difference represents "change." This type of change score, called a "raw gain score," has the virtues of clarity and simplicity; thus we have used it in some analyses. But the raw gain score can also be misleading. For example, if we use this method to find out who shows the greatest gains in self-esteem between one time and another, we will very likely discover that those with the lowest initial scores showed the greatest average upward changes. But this may simply be taking advantage of chance variations in scores, a phenomenon termed regression effects, which may be giving the illusion of change simply because of measurement error.

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*This further analysis of panel attrition is not part of our contracted work for the U.S. Office of Education. It is being done as a doctoral dissertation under separate funding.

**This segment of the report is based on Volume IV in the monograph series--Evolution of a Strategy for Longitudinal Analysis of Survey Panel Data, by Terrence Davidson.

32

There are other types of change scores which take account of the regression effect, but these "adjusted gain scores" can also (under different conditions) give the illusion of change when in fact the situation is stable. The problems with this kind of score are more subtle, and thus all the more likely to mislead.

Our conclusion has been to rely heavily on a "parallel prediction" model which uses the repeatedly measured criteria as static scores. It involves a prediction from a specified predictor, or set of predictors, to the criterion measured at Time 1; then a separate and parallel prediction is made to the criterion measured at Time 2; then the procedure is repeated for Time 3, Time 4, or as many times as the criterion score has been obtained. The relationships are then compared and inferences can be drawn about patterns of change and causation. As Davidson stated in Volume IV (page 76), "The proposed strategy seems to be widely applicable in studies employing panel designs; it avoids the messy philosophical and analytical problems inherent in the use of any and all kinds of change scores, and it provides descriptive data which are interesting in their own right."

Additional Findings

We have reviewed above the major findings dealing with educational issues. But a number of related research areas, "spin-offs" from the original research effort, have produced results worth summarizing briefly here.

Youth Views on National Problems. Some views on national issues were included in all four data collections of the Youth in Transition project. For example, the measure of trust in government showed a gradual increase in mistrust and cynicism from the start of tenth grade (1966) to the end of twelfth grade (1969) and a year beyond (1970). It was not clear from our study whether this represented the results of some sort of maturation during the high school years or a reflection of a shift in national mood about government. Other data from national cross-sections of adults in 1964 and again in 1970 clearly support the latter explanation. The adults showed an increase in mistrust which not only paralleled that of the young men in our sample, it reached greater levels of dissatisfaction.

Some other questions about national issues were asked only in the final (1970) data collection. In particular, the young men were asked to list what they considered to be the major problems facing the nation, and then they were asked to rate the importance of each of six national problems. The results showed that Vietnam far overshadowed all other national problems as the one mentioned by young men in our sample. A series of specific questionnaire items, asked first in 1969 and repeated in 1970, revealed that dissent over Vietnam policies had increased during the year--especial-

ly among those in colleges and universities.

Another national problem mentioned often was race relations. The impression gained from open-ended interview comments is that young men saw this as a major national issue, but did not feel that further governmental action would provide the solution. On the other hand, two other important problem areas, pollution and crime/violence, were both thought to require tough penalties and strict law enforcement.

When asked to rate the "chance of nuclear war" as a national problem, only 35 percent rated it extremely or very important--a far lower percentage than for any of the other problem areas rated. Many expressed the view that a nuclear stalemate has been reached and that "no one is stupid enough to kill everyone." This relatively low concern about nuclear war contrasts sharply with the strong concerns and growing opposition focused on events in Southeast Asia; Vietnam was a clear and present danger for these young men in 1970, whereas the danger of a nuclear holocaust was apparently more abstract and remote.

We concluded from our examination of youth views on national issues that young people are not ready to drop out of "the system" or try to overthrow it. They grew increasingly dissatisfied with government in the latter half of the 1960's; but this is scarcely evidence for a generation gap, since national polls of adults showed similar changes in attitudes. The newly-enacted eighteen-year-old vote, favored by 80 percent of our respondents, provides a constructive opportunity for youth to become more involved in the solving of national problems.

Young Men and Military Service.* Our analysis of young men's attitudes and behaviors related to military service had two foci: the first was an examination of the kinds of young men who enlisted (in late 1969 and early 1970), and the second was an exploration of various incentives for enlistment in an all-volunteer force.

As noted in a previous section, young men who enlisted after high school graduation in 1969 were lower than average in criticism of United States policy in Vietnam. In other respects, such as background and ability, they did not differ substantially from those who entered civilian work roles. Of course, both enlistees and those in civilian jobs were different on the average from those who entered college; thus it is true that dimensions which related positively to college entrance (family socioeconomic level,

*This segment of the report is based on Volume V in the monograph series (forthcoming)--Young Men and Military Service, by Jerome Johnston and Jerald Bachman.

test scores, past scholastic success, high occupational aspirations, etc.) were all somewhat negatively related to enlistment.

Questions about possible enlistment after college indicated that college students were relatively unlikely to enlist. The college students appeared less motivated by immediate monetary needs and more concerned with self-development than their non-college counterparts. We thus conclude that if the military service is to attract such individuals, it may have to place greater emphasis on self-development, perhaps through enlarged educational benefits attached to military service.

A series of questions dealing with expanded incentives for enlistment showed some important differences between those attracted primarily by higher pay and those who would most prefer four years of paid schooling in return for four years of military service. Based on these data, we conclude that an all-volunteer force concentrating entirely on pay incentives would tend to attract those slightly lower in ability and aspirations than the men presently serving, whereas the use of a paid schooling incentive might lead to average increases along these dimensions. Those attracted by educational incentives also showed a somewhat greater tendency to be critical of United States policy in Vietnam, thus suggesting that they might be less susceptible to any sort of "separate military ethos" (one of the concerns often raised about the prospect of an all-volunteer force).

Drug Use and Attitudes.* The 1970 data collection, taken one year after most respondents graduated from high school, included a series of questions about drug use and attitudes toward drug use. Over three quarters of the young men in the sample reported no illegal drug use prior to leaving high school; ten percent tried marijuana but nothing more serious, and another twelve percent at least experimented with a more serious illegal drug. In the year following high school the number of those who had tried some illegal drug at least once had jumped to thirty-six percent, mostly because of experimentation with marijuana.

The use of the two traditional legal drugs in our society--alcohol and tobacco (cigarettes)--was far higher than any use of illegal substances.

When asked their opinions about the use of various drugs, most respondents disapproved. Attitudes toward experimenting with marijuana were less critical than attitudes about other illegal drugs (and regular smoking of cigarettes), thus providing support for the view that many young people do not consider the use of marijuana a serious crime.

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*This segment of the report is based on the forthcoming special report from the Youth in Transition project, Drugs and American Youth, by Lloyd Johnston.

Above average rates of delinquency were found among those who reported heavy use of drugs, the causal direction seems to be from delinquency to drug use rather than the reverse. Those who reported high drug use in 1969 and 1970 were reporting high delinquency rates back in 1966, and there is no indication in the data that the drug users became substantially more delinquent throughout the course of the study. (This finding obviously does not extend to a small but terribly important set of individuals who were not represented among the respondents--those who are addicted to serious drugs and find it necessary to support their habits through crime.) In general, we found delinquency related to drug use in somewhat the same way as we found it related to dropping out of high school; the pattern of delinquency was evident early and is more appropriately treated as a cause (or early indicator) than as an effect.

Young Men's Views on Family Planning and Population Problems.* Perhaps in this area more than any other we felt the limitations of a sample limited to males. Nevertheless, we felt it worthwhile in our 1970 data collection to include some interview and questionnaire items dealing with plans and attitudes about family planning and population growth. A few of the major findings follow.

Most respondents felt there are already too many people in the world, and they considered it preferable to have no further population growth in the United States. Those who expressed greatest concern about overpopulation desired fewer children--2.3 children desired on the average by the third of the sample most concerned about population growth, in contrast to 3.3 children desired by the third of the sample least concerned. The degree of population concern was positively related to socioeconomic level, intelligence, and college attendance.

When asked about sex education in high school, just over one third said they had taken such a unit, but less than half of these had studied birth control methods. The overwhelming majority wished that they had been given such an opportunity in school. Their answers to questions about contraceptive methods confirmed the lack of formal training; just over a third correctly identified a condom as a birth control method used by men, and fewer than one in five similarly identified a vasectomy. Only 40 percent correctly indicated that a woman is most likely to become pregnant about two weeks after menstruation begins; the rest thought the greatest likelihood occurred near or during menstruation. It seems clear that the lack of knowledge in this area represents a challenge to educators and to public policy about sex education.

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*This segment of the report is based on Youth Look at National Problems and on a forthcoming doctoral dissertation by Eugene Weiss, "Family Size Values and Concern for Overpopulation: A Survey of Post High School Age Boys in the United States."

DISSEMINATION OF FINDINGS

The results of the study are being disseminated through a number of complementary channels. Monographs, special reports, journal articles, book chapters and the like make detailed findings available to colleagues in the social sciences and education. Highlights of major findings carried by the mass media make a broader audience aware of our work. And an archiving of the survey responses themselves makes the "raw" data of the study available to other researchers interested in pursuing further analyses on an independent basis.

Monographs and Other Publications

A complete listing of the publications (to date) based on the Youth in Transition project is contained in the appendix to this report. The monographs and special reports are published by the Institute for Social Research; they are sold (and widely publicized) by the Institute's Publications Division. Nearly five thousand copies of Youth in Transition monographs and reports have been sold as of early 1972, and it is expected that this figure will be at least doubled during the next year or two. We have found this form of publication to be a convenient, flexible, and highly effective means of reporting and disseminating scientific findings in considerable detail. (A further advantage to both sponsor and researcher is that the monographs and special reports pay for themselves through sales, thereby avoiding an additional cost as part of the research budget.)

Coverage in the Mass Media

Findings from the project have been covered in various news releases and carried in The Washington Post, The New York Times, and dozens of other newspapers throughout the nation. Results have been discussed on national and local broadcasts.

In addition to newspaper, radio and television coverage, project findings have been reported on a number of occasions through channels specifically designed to review research results: Behavior Today, Science News, The Behavioral Sciences Newsletter, and others.

The dropout findings have been summarized in articles in Society (formerly Transaction), The Education Digest, and Today's Education (a publication which reaches 1.3 million educators). Other findings will be reported in some of these journals, and also in Psychology Today. Such summaries of findings provide much more detail than is possible through news releases, and reach a far broader audience than do the monographs and special reports.

37

Data Archive

The Institute for Social Research has recently decided to archive some of its data so as to facilitate analyses by other researchers. One of the first studies to be archived will be Youth in Transition. Work is already underway to place our data tapes in the archive format so that others can conduct analyses using our data. (We have had to decline several requests for use of data up to now because of the cost in terms of staff time. This will no longer be a problem when our results are placed in the archive.)

CONCLUSIONS AND RECOMMENDATIONS

It would be convenient if we could now reduce our findings to a handful of pithy sentences which would convey in a glance all the really important conclusions from the Youth in Transition project. Alas, our results and conclusions have already undergone several "boiling down" operations--first into summary chapters in monographs or special reports, and then into the "Summary of Major Results" presented above. In the present section we can review only a selected set of conclusions, with emphasis on those leading to recommendations. The reader who wishes a more complete review of our conclusions is referred to the earlier section of this report.

Dealing with "the Dropout Problem"

Our findings lead us to conclude that dropping out of high school is not primarily a problem in its own right, but rather a symptom of other problems or limitations. Treating a symptom may be easier--and in the short run perhaps more satisfying--than treating the underlying problems. But such treatments can have unpleasant side effects, and the present "anti-dropout campaign" in the mass media is a case in point.

RECOMMENDATION: *The mass media campaign against dropping out should be sharply curtailed.*

At least three reasons support this recommendation:

1. The campaign implies that if the potential dropout merely remains in school he can be just like his classmates who continue to graduation. This simply is not so; by the time he reaches tenth or eleventh grade the potential dropout usually has basic problems and/or limitations that will not be "cured" by another year or two of high school.

2. The oversimplifications underlying the mass media campaign can have a general effect of eroding credibility. This is not simply a matter affecting potential dropouts; nearly everyone is exposed to the advertising campaign, and many of our brightest and most perceptive young people are likely to view it as one more instance of heavy-handed manipulation by "the establishment."

3. The media campaign may have some features of a self-fulfilling prophecy. One of the side-effects of downgrading the status of dropouts may be to encourage employers to make the diploma a requirement when it need not be.

In our view, dropping out is a symptom which signifies a mismatch between certain individuals and the typical high school en-

vironment. In principle, the mismatch could be resolved by (a) changing the individuals so that they are better able to fit into the high school environment, (b) changing the high school environment, or (c) changing both. We think there is room for change on both sides.

RECOMMENDATION: *Remedial efforts designed to improve individual performance must begin far earlier than high school, perhaps well before elementary school.*

Among the important elements in the mismatch between potential dropouts and the high school environment are individual limitations in academic ability, past scholastic failure, and patterns of delinquent behavior. These are not problems that are likely to be resolved by persuading a young man to remain through the last year or two of high school. But earlier intervention holds the possibility of avoiding some of the problems which are deeply ingrained by the time an individual is ready to drop out. It must be emphasized that our own research provides no guarantee that early intervention will work; it simply demonstrates that later intervention is a much poorer risk.

Family Background and Ability

Family background factors, especially socioeconomic level, have had pervasive effects in the areas we have studied. They are strongly related to measures of intelligence and academic ability, and the latter dimensions are in turn related to school performance, occupational aspirations, dropping out, and other criterion dimensions. This pattern of relationships has led us to view intellectual abilities as "intervening variables" lying in the middle of the following causal sequence: family background exerts an influence on intelligence which in turn exerts an influence on various criterion dimensions. This is not to say that all of the relationships between intelligence and the criteria can be traced back ultimately to family background factors; only a portion of the relationships fit that interpretation, but the proportion is often fairly large.

Racial Differences. Our research found racial differences in test scores and also in socioeconomic level. Along both of these dimensions, the major differences did not lie between whites and all blacks. Rather, we found that blacks in integrated schools were quite similar to all whites (integrated and segregated), while blacks in northern segregated schools were somewhat lower and blacks in southern segregated schools were much lower on test scores and socioeconomic level. Our study was not designed to concentrate on racial differences, and thus our sample is not well-suited to drawing firm conclusions in this area. Nevertheless, we can conclude that the present data add some evidence to the view that so-called "racial differences" are primarily--if not exclusively--differ-

ences in cultural and educational opportunities.

A further conclusion is that research on racial differences should not simply compare all whites with all blacks. We would recommend that comparisons of racial groups take account of integrated versus segregated schools (at least among blacks), as well as region. Hopefully such differences will pass after a time; but for the present and the near future, rather than talking in terms of racial differences we had better talk in terms of an interaction between race, school integration, and region.

Vocational Education

While students in college preparatory programs averaged highest in ability measures and family socioeconomic level, those in vocational programs averaged lowest (somewhat below those in business and general programs). Thus the vocational programs contained the highest proportion of individuals who could, in terms of background and abilities, be termed dropout-prone. But dropout rates were no greater among vocational students than among those in business and general programs. In other words, dropout rates were actually a bit lower among vocational students than would be expected based on their background and ability scores. (Those in general programs showed dropout rates higher than would be expected based on their scores.)

Given that vocational students showed an above-average tendency to prefer work activities over school, it may be that the work-related emphasis in vocational programs is an important factor in their lower-than-expected dropout rate. Thus it might be wise for curriculum developers in vocational programs (and perhaps other programs also) to emphasize work-relevance in their attempts to make courses interesting and relevant to students.

It was found that vocational education students received counseling from both counselors and teachers, but they relied on teachers to a greater extent than was true for students in other programs. Perhaps it would be wise to capitalize on the "natural" counseling opportunities open to the vocational teacher. Further training in counseling techniques could be encouraged, and increased resources could be devoted to developing placement networks that would enable vocational teachers to place their graduates into jobs.

High Schools and their Effects

We stated earlier our conclusion that those differences among students which appeared in comparing schools appear to be due almost entirely to student input characteristics (ability, socio-

economic level, etc.) rather than genuine school effects. And we noted that other researchers, especially James Coleman in his study of equality of educational opportunity, had reached a similar conclusion using different methods and measures.

What shall we conclude from this rather consistent inability of carefully controlled research to uncover differential school effects? One possibility, of course, is that schools simply do not do much of anything for (or to) their students. An alternative explanation is that our efforts toward universal education and equality of educational opportunity have been generally more successful than we realized, and that public schools throughout the nation are more similar than they are different. (Our findings for blacks in segregated schools obviously suggest one very important exception to any such pattern of equality.)

Much policy and practice are directed toward making educational environments equally effective. If some new educational technique shows promise in one school, there is a strong tendency to try it in other schools. Indeed, had the Youth in Transition project been able to isolate some particular practices which characterized effective schools, there would have been an effort to encourage other schools to adopt the same effective practices, and the result would have been a further leveling of school differences.

Perhaps most important is the fact that the educational environment of young people today is certainly not limited to schools. To the extent that other institutions in the society contribute to education and socialization--the media, churches, youth organizations--any possibility that variations in schools will produce substantial differences in students is diminished. To a greater extent than has ever been true before, students are able to compensate for experiences which are not available in their particular schools by finding them elsewhere.

In retrospect, the overall lack of differential school effects is not necessarily proof that schools are generally ineffective. It could just as well indicate that our schools, in conjunction with other aspects of our culture, are succeeding in making equally rich educational opportunities available to nearly all who desire them. Perhaps the most realistic conclusion involves a balance between these two interpretations. Public schools show a great deal of similarity with one another, and this applies both to their areas of strength (e.g., academic preparation for college) and their areas of relative weakness (e.g., vocational preparation and placement). Thus, it is not so much a matter of which particular schools are the effective ones, but rather a case of discovering the areas in which schools in general are effective and (more urgently) those in which they tend to be ineffective.

New Educational Alternatives

Even if we hope eventually to reduce or eliminate experiences of early school failure and other problems which are presently associated with dropping out, it is still worth asking whether our current approach to high school education is entirely sound. Is it clear that we should prescribe twelve or more years of uninterrupted schooling for virtually all young people in the United States? The campaign against dropping out seems based on the assumption that everyone needs at least twelve years of formal education. But our research has led us to question that assumption.

Certainly there are alternatives to a twelve-year diploma; perhaps one based on ten years would be sufficient. Young people wishing to enter college might spend the years equivalent to grades eleven and twelve in publicly supported college preparatory academies. Others might enter one-year or two-year vocational training or work-study programs; some such programs could be publicly operated, and some might be privately operated in conjunction with a system of publicly-supported tuition vouchers. Still other young people might choose to go directly into the world of work after their tenth-grade graduation--some to return to part-time or full-time education after a year or two or three. The recent growth of community colleges with their wide-ranging course offerings, flexible time schedules, generous enrollment policies and low tuition rates suggests that there is a growing need for this sort of educational freedom of opportunity.

In a world of rapidly changing technology with its emphasis on continuing education and periodic retraining, there is less and less reason to maintain the traditionally sharp boundary between the role of student and the later role of worker. Shortening the prescribed minimum period for full-time uninterrupted schooling might be a positive step toward new patterns of lifetime education in which individuals can choose for themselves among a wide range of "educational life-styles." If such changes would reduce the credential value attached to high school diplomas, all the better. One of the unfortunate side effects of the anti-dropout campaign has been the tendency to confuse education with credentials; any step in the opposite direction could have a salutary effect on our whole educational establishment.

The above notions are speculations triggered by some of our findings; we are not presenting them as thoroughly researched proposals. Our purpose is simply to illustrate that there are potentially viable alternatives to the traditional twelve-year program of study which we now urge upon practically every teenager. The basic point, in our view, is that such alternatives should be given serious consideration.

Some Comments about Research Methodology

After seven years of working on a longitudinal project, we have drawn some conclusions which relate to research methodology, and it seems appropriate to mention a few of them here.

The Uses of Longitudinal Designs. The longitudinal design of our project was vital in reaching our conclusion that dropping out is primarily a symptom. We knew from other research that there were differences between those who dropped out and those who did not, but we were not clear about the extent to which the dropping out produced the differences, or vice versa. In other words, we knew that a relationship existed, but we needed a longitudinal design to learn more about the direction of causation underlying that relationship.

By way of contrast, our examination of differential school effects turned out not to be heavily dependent upon the longitudinal design. If we had found important differences in evidence at the end of high school (differences not explainable in terms of ability and family background), then we would have turned to the longitudinal aspect of the study to see whether those differences arose during the high school years rather than the junior high or elementary years. But those differences did not appear.

If one were to undertake further research attempting to find differential school effects, a two-stage procedure seems indicated. The first stage would use cross-sectional surveys to seek relationships existing at the end of high school. If and when such relationships were found, then a second stage would call for further studies to determine whether the relationships came into being during the period of schooling under study. (For example, if the school effect is thought to occur during the high school years, the relationships observed at the end of the senior year should not be found--at least not as strongly--at the start of the freshman or sophomore year.) Even these further studies could be cross-sectional (as was the case in Coleman's study of equality of educational opportunity).

In our view, longitudinal studies are uniquely valuable in those areas where self-selection plays a major role in determining individual experiences. Dropping out is a very clear example of such an area. Another example is the choice of a college, or the selection of a particular college major. In these sorts of areas, there is no adequate substitute for longitudinal research. But in many other areas one can make fairly solid inferences about causation without incurring the great costs--in both time and money--that are so often associated with longitudinal studies.

Some Advantages of Regularly-Scheduled Repeated Data Collections. A longitudinal study involves repeated data collections, and our experience has made us aware of two major advantages of a cyclical pattern of survey activities. It must be stressed that these advantages are not limited to truly longitudinal designs (i.e., those involving repeated data collections from the same panel of respondents); they apply equally well to studies which survey new cross-sectional samples on a regular basis.

One perhaps obvious advantage of repeated data collections is the administrative efficiency it permits. Field procedures can be standardized and used (with little or no modification) throughout a succession of data collection waves. There are related efficiencies in project staffing and training.

A second advantage of repeated data collections is the opportunity to add new survey material on relatively short notice and at very little marginal cost. In the Youth in Transition project we took advantage of this feature in order to update our instruments and move into several new and important areas. The "spin-off" projects mentioned earlier in this report are clear examples of this ability to adapt relatively quickly to new research interests and opportunities. Our studies of (a) views and behaviors relating to military service, (b) drug use and attitudes, and (c) plans and knowledge relating to family size and population growth, all were made possible because we were able to collect the data promptly rather than start from the beginning in designing a study, building a staff, drawing a sample, etc.

Future Work on the Youth in Transition Project

Work is continuing on some of the "spin-off" projects mentioned above, but our major commitment to the U.S. Office of Education has been completed. However, as the previous section indicates, studies involving repeated data collections have a way of expanding and opening up further opportunities.

By mid-1973 all of the original Youth in Transition respondents will have passed their twenty-first birthday, and most will be twenty-two. Many will have completed a four-year college program by mid-1973, and some will be entering their first "real" adult jobs. Others will have completed a tour of duty in the military service, and still others will be moving into their fifth year in the civilian work force.

Given the events noted above, we think the fall of 1973 marks a fine time to return to the Youth in Transition panel for another major data collection--the fifth. This is not the place for an extended discussion of a future data collection, but it may be worth noting that a number of the subject areas treated in this report would be prominently involved in such a follow-up.

Our study of the effects of dropping out of high school, especially its impact on employment, should be extended to more than one year beyond graduation (for those who stayed in school). It may be that the initial lack of large differences between dropouts and stayins will continue to hold several years later, and our findings will be confirmed and extended. On the other hand, it has sometimes been argued that the lack of a diploma becomes a more severe handicap after one is in the labor force for a time. If this is so, a follow-up in 1973 should provide clear evidence for it.

Work experiences in general, and shifts in vocational attitudes and aspirations, should be explored in the fifth data collection. Such data would be valuable from all members of the panel, including those who had been in college, those who had served in the military, and those with some years of experience in the civilian work force.

The impact of post-high school environments should be examined for a variety of other dimensions in addition to those related to work. We have already seen some indication that different experiences following high school lead to different patterns of change in political ideology; a 1973 follow-up would clarify such patterns greatly, and might extend our knowledge about youth attitudes and practices in other areas such as drug use and family life.

The above observations about a possible fifth data collection illustrate the open-ended nature of longitudinal research. We have learned a good deal from the Youth in Transition panel, but in most cases what we have learned has raised additional questions which should be answered. Thus this point of completion is in many respects also a beginning.

APPENDIX

PUBLICATIONS FROM THE YOUTH IN TRANSITION PROJECT

Monographs

Youth in Transition, Volume I: Blueprint for a Longitudinal Study of Adolescent Boys; Jerald G. Bachman, Robert L. Kahn, Martha T. Mednick, Terrence N. Davidson, Lloyd D. Johnston; 1967; Institute for Social Research; Ann Arbor, Michigan.

Youth in Transition, Volume II: The Impact of Family Background and Intelligence on Tenth-Grade Boys; Jerald G. Bachman; 1970; Institute for Social Research; Ann Arbor, Michigan.

Youth in Transition, Volume III: Dropping Out - Problem or Symptom? Jerald G. Bachman, Swayzer Green, and Ilona D. Wirtanen; 1971; Institute for Social Research; Ann Arbor, Michigan.

Youth in Transition, Volume IV: Evolution of a Strategy for Longitudinal Analysis of Survey Panel Data; Terrence N. Davidson; 1972; Institute for Social Research; Ann Arbor, Michigan.

*Youth in Transition, Volume V: Young Men and Military Service; Jerome Johnston and Jerald Bachman; 1972 (in press); Institute for Social Research; Ann Arbor, Michigan.

Additional monographs in this series are forthcoming. Topics include those treated in "Working Papers 8, 9, & 10." Further topics may include drugs, population and family planning, the meaning of work, and others.

Special Reports

*Young Men Look at Military Service; Jerome Johnston; 1971.

Youth Look at National Problems; Jerald G. Bachman and Elizabeth Van Duinen; 1971.

*Drugs and American Youth; Lloyd D. Johnston; 1972.

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*These reports were funded in part or entirely through grants and contracts with agencies other than U.S.O.E.

Working Papers

W.P. 1: Blueprint for a Nationwide Longitudinal Study of Adolescent Boys; Jerald G. Bachman, Robert L. Kahn, Martha T. Mednick, Terrence N. Davidson, and Lloyd D. Johnston; May 1967; Institute for Social Research; Ann Arbor, Michigan.

W.P. 2: Univariate Statistics Describing a Nationwide Sample of Tenth-Grade Boys; Allison W. Arscott; July 1968; Institute for Social Research; Ann Arbor, Michigan.

W.P. 3: Some Studies of Background Factors, Achievement, and Mental Health in a Nationwide Sample of Adolescent Boys; Jerald G. Bachman, Richard Bloom, Terrence N. Davidson, Lloyd D. Johnston, Martha T. Mednick, Joel O. Raynor; October, 1968; Institute for Social Research; Ann Arbor, Michigan.

W.P. 4: Why and How Young Men Drop Out of High School: Some Preliminary Findings; Ilona D. Wirtanen; February, 1969; Institute for Social Research; Ann Arbor, Michigan.

W.P. 5: American High Schools; Some Organizational Characteristics and Factors Related to Teacher Satisfaction, Counselor Satisfaction, and the Quality of Counseling Programs; Lloyd D. Johnston, Willard L. Rodgers, Terrence N. Davidson, Jerome Johnston; May 1969; Institute for Social Research; Ann Arbor, Michigan.

W.P. 6: A Mail Survey of 2,000 Public High School Teachers: Documentation of the Field Procedures and Lack of Evidence for "Mail-Back Bias"; Sally B. Iman; August 1969; Institute for Social Research; Ann Arbor, Michigan.

W.P. 7: Cross-Time Frequency Distributions from a Longitudinal Panel of Young Men; Allison W. Arscott; October 1970; Institute for Social Research; Ann Arbor, Michigan.

*W.P. 8: Vocational Education--Its Place in Public High Schools; Joseph A. Johnston and Terrence N. Davidson; April 1972; Institute for Social Research; Ann Arbor, Michigan.

W.P. 9: Conceptualizing the High School as a Social System; Lloyd D. Johnston; May 1972; Institute for Social Research; Ann Arbor, Michigan.

W.P. 10: The Impact of School and Work Environments on Young Men; Jerald G. Bachman, Patrick O'Malley, Barbara D. Thomas, Lloyd D. Johnston; June 1972; Institute for Social Research; Ann Arbor, Michigan.

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*These reports were funded in part or entirely through grants and contracts with agencies other than U.S.O.E.

Journal Articles

Mednick, M.T. Relationship of the Ammons Quick Test of intelligence to other ability measures. Psychological Reports, 1967, 20, 523-526.

Mednick, M.T. The validity of the Ammons Quick Test of intelligence. Psychological Reports, 1969, 24, 388-390.

Bachman, J.G. Anti-dropout campaign and other misanthropies. Social Science and Modern Society (Trans/action), March, 1972, 9, (5), 4-5,60.

Bachman, J.G. Dropping out--problem or symptom? Today's Education, April, 1972, 61, (4), 26-31.

Bachman, J.G., Green, S, & Wirtanen, I. Dropping out is a symptom. The Education Digest, April, 1972, 37, (8), 1-5.

Chapters

*Bachman, J.G. The draft, military service, and national unity--A contribution to the debate. Appears in Gottlieb, D. (ed.), Youth in Contemporary Society, Sage Publications, 1972 (in press). Also

Johnston, L.D. and Bachman, J.G. The functions of educational institutions in adolescent development. In James Adams (ed.), Understanding Adolescence, 2nd ed. Boston: Allyn and Bacon, 1972.

Robinson, J.P. and Bachman, J.G. Television viewing habits and aggression. In G.A. Comstock and E.A. Rubenstein (eds.), Television and Social Behavior. Vol 3 Television and Adolescent Aggressiveness.

Papers and Symposia

Bachman, J.G. Changes in young men's attitudes toward military service. Paper read at the American Psychological Association convention, San Francisco, August, 1968.

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*These reports were funded in part or entirely through grants and contracts other than U.S.O.E.

Symposium presented at the American Psychological Association convention, San Francisco, August, 1968. (Authors and titles same as in "Working Paper 3.")

Symposium presented at the American Educational Research Association convention, Los Angeles, February, 1969. (Authors and titles same as in "Working Paper 5.")

Johnston, Jerome. The future soldier: A profile of today's youth. Paper presented at the Conference on Current Trends in Army Social Work, Denver, September, 1970.

Johnston, Jerome. Young men's impressions of military service. Paper presented at the American Psychological Association convention, Miami, September, 1970.

Johnston, Lloyd. The question of purpose in American high schools. Paper read at the Michigan Educational Research Council convention, Ann Arbor, November, 1970.

Bachman, J.G. The draft, military service, and national unity--A contribution to the debate. Paper presented at the "Youth in the seventies" conference, sponsored by Office of Child Development, HEW, Stillwater, Minn., June, 1971.

Bachman, J.G. Youth looks at the future. Paper read at the American Association for Public Opinion Research, Atlantic City, May, 1972.